**WHAT IS CLAIMED IS:**

1. A method of fabricating a thin film transistor, the method comprising:

forming a gate electrode of the thin film transistor on a substrate;

depositing an organic insulating layer over the substrate having the gate electrode;

transferring the substrate to a heating and deposition equipment;

heating the substrate in the equipment under vacuum and curing the organic insulating layer; and

forming a silicon layer on the organic insulating layer in the equipment without breaking the vacuum.

2. The method of claim 1, wherein the organic insulating layer is selected from a group consisting of benzocyclobutene (BCB) and acryl.

3. The method of claim 1, wherein heating is performed under an inert gas condition.

4. The method of claim 3, wherein the inert gas includes nitrogen gas ($N_2$).

5. The method of claim 1, further comprising transferring the substrate from a first chamber of the equipment where the heating and curing take place to a second chamber of the equipment where the silicon layer is formed without breaking the vacuum.

6. An apparatus for fabricating a thin film transistor, wherein the thin film transistor includes an organic insulating layer and an active layer having a first amorphous silicon layer and a doped amorphous silicon layer over a substrate, the apparatus comprising:

a first reaction chamber for curing the organic insulating layer;

a second reaction chamber for forming the first amorphous silicon layer;

a third reaction chamber for forming the doped amorphous silicon layer; and

a preparation chamber for providing a vacuum condition,

wherein the preparation chamber is adjacent the first, second and third reaction chambers and the substrate is transferred from the first chamber to the second chamber under the vacuum condition through the preparation chamber.

7. The apparatus of claim 6, wherein the first reaction chamber is capable of introducing inert gas for curing.

8. The apparatus of claim 7, wherein the inert gas includes nitrogen gas ($N_2$)

9. An apparatus for fabricating a transistor, wherein the transistor includes an organic layer and a semiconductor layer, the apparatus comprising:

a first chamber for curing the organic layer;

a second chamber for forming the semiconductor layer; and

a preparation chamber adjacent the first and second chambers,

wherein the preparation chamber allows a product being formed into the transistor to transfer between the first and second chambers under vacuum.

10. The apparatus for fabricating a transistor according to claim 9, wherein the first chamber heats and cures the organic layer and the second chamber forms the semiconductor layer including amorphous silicon.

11. The apparatus for fabricating a transistor according to claim 9, wherein the first, second and preparation chambers are all in one unit.

12. The apparatus for fabricating a transistor according to claim 9, further comprising a third chamber for forming a second semiconductor layer, the preparation chamber allowing the product being formed into the transistor transfer from the second chamber to the third chamber under vacuum.

13. The apparatus for fabricating a transistor according to claim 9, wherein the first, second, third and preparation chambers are all in one unit.

14. The apparatus for fabricating a transistor according to claim 9, wherein the first chamber is capable of introducing inert gas during curing of the organic layer.

15. A method of forming a thin film transistor comprising:

forming a gate electrode on a substrate;

forming an organic layer over the substrate having the gate electrode;

curing the organic layer in a first chamber;

transferring the substrate having the organic layer from the first chamber to a second

chamber without exposing the substrate having the organic layer to oxygen atmosphere during transfer;

forming an active layer on the organic layer in the second chamber; and

forming source and drain electrodes on the active layer.

16. The method of claim 15, further wherein the active layer includes an amorphous silicon layer and a doped amorphous silicon layer.

17. The method of claim 15, wherein the organic layer is cured under an inert gas atmosphere.

18. A method of making a liquid crystal display device having a first substrate and a second substrate, the method comprising:

forming a gate electrode on the first substrate;

forming an organic layer over the first substrate having the gate electrode;

curing the organic layer in a first chamber;

transferring the first substrate having the organic layer from the first chamber to a second chamber without exposing the first substrate having the organic layer to oxygen atmosphere during transfer;

forming an active layer on the organic layer in the second chamber;

forming source and drain electrodes on the active layer;

forming a pixel electrode connected to the drain electrode; and

forming a liquid crystal layer between the first substrate and the second substrate.

19. The method of claim 18, further wherein the active layer includes an amorphous silicon layer and a doped amorphous silicon layer.

20. The method of claim 18, wherein the organic layer is cured under an inert gas atmosphere.